WEST VIRGINIA SCHOOL
OF OSTEOPATHIC MEDICINE

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May 1, 2009

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Elizabeth Ullrich, CHP
U. S. Nuclear Regulatory Commission
Division of Nuclear Materials Safety
475 Allendale Road
King of Prussia, PA 19406-1415

03037121

Re: Application to Terminate Radioactive Materials License No. 47-19315-02

Dear Ms. Ullrich:

The West Virginia School of Osteopathic Medicine, located at 400 North Lee Street in Lewisburg, West Virginia 24901, holds U. S. Nuclear Regulatory Commission License No. 47-19315-02. The purpose of this letter is to request that the license be terminated. All licensed radioactivity has been disposed of and a final status survey documenting that the facility may be released for unrestricted use has been performed. An executed copy of NRC Form 314 and a copy of the final status survey report are enclosed.

If you have any questions or if I can provide you with additional information, please do not hesitate to call me at (304) 647-6370. I look forward to receiving notice that our license has been terminated. We will maintain control over the Lewisburg restricted areas until such time as notification is received.

Sincerely,

John A. S[signature]

John Schriefer, Ph.D.,
Radiation Safety Officer

143742

NMSS/RGN1 MATERIALS-002

NRC FORM 314 (6-2004)
10 CFR 30.36(j)(1); 40.42(j)(1); 70.38(j)(1); and 72.54(j)(1)

U.S. NUCLEAR REGULATORY COMMISSION

CERTIFICATE OF DISPOSITION OF MATERIALS

APPROVED BY OMB: NO. 3150-0028 EXPIRES: 06/30/2007

Estimated burden per response to comply with this mandatory collection request: 30 minutes. This submittal is used by NRC as part of the basis for its determination that the facility is released for unrestricted use. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0028), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE NAME AND ADDRESS
West Virginia School of Osteopathic Medicine
400 North Lee Street
Lewisburg, WV 24901

LICENSE NUMBER: 47-19315-02

DOCKET NUMBER: 030-37121

LICENSE EXPIRATION DATE: 02/~~28~~ 29/2016

A. LICENSE STATUS *(Check the appropriate box)*

☐ This license has expired. ☑ This license has not yet expired; please terminate it.

B. DISPOSAL OF RADIOACTIVE MATERIAL

(Check the appropriate boxes and complete as necessary. If additional space is needed, provide attachments)

The licensee, or any individual executing this certificate on behalf of the licensee, certifies that:

☐ 1. No radioactive materials have ever been procured or possessed by the licensee under this license.

☑ 2. All activities authorized by this license have ceased, and all radioactive materials procured and/or possessed by the licensee under this license number cited above have been disposed of in the following manner.

☐ a. Transfer of radioactive materials to the licensee listed below:

☑ b. Disposal of radioactive materials:

☐ 1. Directly by the licensee:

☐ 2. By licensed disposal site:

☑ 3. By waste contractor:

Integrated Environmental Management, Inc.
TDEC RadioactiveWaste (Broker) License-for-Delivery No. T-TN055-L06
MDE Radioactive Materials License No. MD-31-281-01

☑ c. All radioactive materials have been removed such that any remaining residual radioactivity is within the limits of 10 CFR Part 20, Subpart E, and is ALARA.

C. SURVEYS PERFORMED AND REPORTED

☑ 1. A radiation survey was conducted by the licensee. The survey confirms:

☐ a. the absence of licensed radioactive materials

☑ b. that any remaining residual radioactivity is within the limits of 10 CFR 20, Subpart E, and is ALARA.

☑ 2. A copy of the radiation survey results:

☑ a. is attached; or ☐ b. is not attached (Provide explanation); or ☐ c. was forwarded to NRC on: ____________ Date

☐ 3. A radiation survey is not required as only sealed sources were ever possessed under this license, and

☐ a. The results of the latest leak test are attached; and/or ☐ b. No leaking sources have ever been identified.

The person to be contacted regarding the information provided on this form:

NAME	TITLE	TELEPHONE *(Include Area Code)*	E-MAIL ADDRESS
John Schriefer, Ph.D.	Radiation Safety Officer	(301) 647-6370	jschriefer@wv.wvsom

Mail all future correspondence regarding this license to:
John Schriefer, Ph.D., West virginia Schoool of Osteopathic Medicine, 400 North Lee St., Lewisburg, WV 24901

C. CERTIFYING OFFICIAL

I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT

PRINTED NAME AND TITLE	SIGNATURE	DATE
John Schriefer, Ph.D.	[signature]	05/01/2009

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECT. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

143742

Final Status Survey of the Smith Science Building

Submitted to:

West Virginia School of Osteopathic Medicine
400 North Lee Street
Lewisburg, West Virginia 24901
(304) 647-6370

by:

Integrated Environmental Management, Inc.
6700 Baum Drive, Suite 19
Knoxville, Tennessee 37919
(865) 588-9180

Report No. 2008019/G-1381
April 28, 2009

TABLE OF CONTENTS

1 INTRODUCTION

The West Virginia School of Osteopathic Medicine (WVSOM) performs bio-medical research at the Smith Science Building in Lewisburg, West Virginia. Hydrogen-3, or tritium, was used for one study under the provisions of a radioactive materials license issued to the WVSOM by the U. S. Nuclear Regulatory Commission (USNRC). License No. 47-19315-02 was issued in 2006 and remains in good standing.

Effective July 10, 2007, principle activities authorized by License No. 47-19315-02 ceased, and on February 18, 2009 all existing licensed radioactivity at the site, which was comprised of 1.56 cubic feet of laboratory waste, was shipped to persons authorized to receive those materials under the terms of a specific license. However, in order to terminate the radioactive materials license, the WVSOM radiation safety staff must demonstrate that there are no radiological issues of concern remaining at the site. To that end, IEM was contracted by the WVSOM to perform/document a final status survey demonstrating that the facility may be released for unrestricted use (i.e., without regard for their radiological constituents).[1]

The on-site portion of the project was completed on February 17-18, 2009, followed by the preparation of this Final Status Survey (FSS) Report. Included herein is a description of the site, a review of the history of radiological operations in the laboratories and recent radiological conditions, an overview of the project and its objectives, a description of the procedures followed, a listing of all data acquired from the site, and a statement in regard to the release status of the Smith Science Building. Representatives of the WVSOM were given an opportunity to review and comment on a draft before the publication of this FSS Report.

[1] IEM is licensed by the Maryland Department of the Environment (MDE License No. MD-31-281-01), a USNRC Agreement State, to perform the types of radiation-related services required for this project.

2 BACKGROUND

2.1 Facility History

Radioactive materials were used at the WVSOM Smith Science Building from the date of original license issue in the 1970's pursuant to License No. 47-19315-01. The facility was decommissioned in 2004 and the license was terminated. However, in 2006, the WVSOM applied for re-instatement of the license, which was subsequently issued as License No. 47-19315-02. The only licensed radioactivity ever received at the site under that license was tritium, which was used for research purposes between May, 2006 and July, 2007.

2.2 Description of Facility

The Smith Science Building is a two-story brick building within the campus of the West Virginia School of Osteopathic Medicine. the radiologically restricted areas at the site are designated as Room 242, Room 243 and Room 124 (see Table 7.1).

2.3 Contaminant Identification

Although License No. 47-19315-02 allows for the acquisition and use of various radioactive materials, the WVSOM received only tritium for usage at the Smith Science Building. Table 7.2 is a listing of the radioactive materials inventory from the time of license issue until final disposal.

2.4 Results of Previous Surveys

Radioactive materials were never used within Room 242. However, routine wipe tests for the detection of removable activity were performed weekly in Room 243 for the duration of radioactive material usage. All wipes indicated no removable activity in excess of 1,000 dpm of tritium per 100 cm^2.

Wipes were performed in the storage closet of Room 124 starting when radioactive waste was drummed and placed in this area. These wipes indicated no removable activity above 100 dpm per 100 cm^2.

3 SURVEY APPROACH

3.1 Project Organization

For this work, Michael W. Kimbro, RRPT, of IEM's Tennessee office, served as the Project Manager and coordinated the field and final status survey efforts. Carol D. Berger, CHP, of IEM's Maryland office served as the Project CHP and was responsible for the technical requirements associated with the project and review of this report. Appendix 8.1 contains the qualifications of each member of the project team. All on-site work was performed under the terms/conditions of reciprocal recognition of IEM's radioactive materials license.[2]

3.2 Survey Planning

USNRC guidance indicated that an abbreviated final status survey was applicable to the Smith Science Building.[3] In advance of mobilizing to the site, a survey plan consistent with that guidance was prepared. Based on previous survey results and the historical use of radioactivity at the site, final surveys were only required in Rooms 242 and 243 (see Table 7.3).

3.3 Release Criteria

The USNRC has established criteria for ensuring that facilities and property that were used for licensed operations present negligible radiological risk to people and the environment once licensed operations cease. The radiation dose limit that the USNRC believes presents negligible risk is published in Title 10, Code of Federal Regulations, Part 20.1402:

> *"Decommissioning with license termination shall be limited to sites considered acceptable for unrestricted release where the residual radioactivity that is distinguishable from background radiation results in a total effective dose equivalent to an average member of the critical group that does not exceed twenty-five millirem per year (25 mrem/yr), including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA)..."*

The level of residual radioactivity permissible on a building surface that would ensure compliance with USNRC's radiation dose objective is designated as the derived concentration guideline level (DCGL) as defined in MARSSIM.[4]

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[2] The Maryland Department of the Environment, a U. S. Nuclear Regulatory Commission Agreement State, has issued License No. MD-31-281-01 to IEM, which permits, among other things, the performance of final status surveys at client sites. The USNRC recognized the provisions of License No. MD-31-281-01 on February 5, 2009 for work at the WVSOM site (Reciprocity No. 000163).

[3] U.S. Nuclear Regulatory Commission, *Consolidated Decommissioning Guidance Characterization, Survey, and Determination of Radiological Criteria*, Appendix B, NUREG 1757, Volume 2, Rev 1, September, 2006.

[4] U.S. Nuclear Regulatory Commission, *Multi-agency Radiation Survey and Site Investigation Manual*, NUREG-1575, Revision 1, August, 2000.

For the purpose of this survey effort, the DCGLs were set to the screening values presented in Table H.1 of NUREG-1757, Volume 2 .[5] A gross tritium activity release criterion of 1.2×10^8 dpm/100cm^2 was thus used for the final status survey. Table 7.4 shows the source term and the screening value (DCGL).

3.4 Objectives

The objective of the final status survey was to release the Smith Science Building in accordance with guidance established by the USNRC and MARSSIM. This objective was accomplished in general by:

- Selecting the appropriate instrumentation to adequately detect the radionuclides of concern;
- Establishing proper count times and measurement methods to verify that the release criteria are met;
- Performing surveys to verify the radiological status of the facility;
- Verifying that personnel exposure from residual contamination will not exceed 25 mrem/year based on the future use of the facility; and
- Evaluating the data to ensure that sufficient information is collected to release the rooms for unrestricted use.

3.5 On-site Activities

The Project Manager mobilized to the site on February 17-18, 2009. Appendix 8.2 contains a copy of the Field Activity Daily Logs from the on-site portion of the project. Appendix 8.3 contains the instrument records (i.e., calibration certificates and daily checks).

Each room was inspected and cleared of all loose equipment and materials to the maximum extent possible prior to the start of the surveys. The background and detector response to a known quantity of radiation was documented each day before the instrument was used.

A windowless gas flow proportional tritium detector was used to scan 100% of the floors walls below 6 feet, benchtops and cabinets. The same instrument was used to collect the direct measurement data. Smears, collected with polyfoam media by wiping approximately 100 cm^2 of the applicable surface, were sent to an off-site facility for analysis by liquid scintillation counting.

3.6 Instrumentation

The radiation detection instrumentation used for this effort was selected and operated according to the type of analysis being performed, and to ensure sensitivities sufficient to detect the identified radionuclides at the minimum detection requirements. Table 7.5 is a list of the instrument types that were used for the final status survey, along with the types of radiations they detect, and the necessary calibration sources.

These instruments were calibrated annually using sources traceable to the National Institute of Standards and Technology (NIST), and following the guidance found in ANSI N323-1978,

[5] U.S. Nuclear Regulatory Commission, *Consolidated Decommissioning Guidance Characterization, Survey, and Determination of Radiological Criteria*, Table H.1, NUREG 1757, Volume 2, Rev 1, September, 2006.

"Radiation Instrumentation Test and Calibration". Each ratemeter or scaler/ratemeter was calibrated with a specific detector, designated by the detector serial number. In addition, the following pre-operational checks were performed and prior to use at the Smith Science Building:

- Battery function
- Response to a reference source.
- Reset Button function.
- Audible response function.
- Physical damage.
- Current calibration sticker
- Response to background radiation.

Copies of the instrument daily checks and the calibration records are included in Appendix 8.3.

3.6.1 Direct Measurement MDAs

The equation used to calculate the minimum detectable activity for direct measurements of beta radiation is:

$$MDA = \frac{2.71 + 4.65\sqrt{R_b \times t_b}}{t_s \times E \times \frac{A}{100}}$$

where MDA = Minimum detectable activity (dpm/100cm^2), R_b = Background count rate (cpm), t_b = Background count time (minutes), t_s = Sample count time (minutes), A = Detector area (cm^2), and E = Detector efficiency (counts/disintegration).[6]

3.6.2 Surface Scan MDAs

The equation used for calculating the MDA for tritium scans (MDA_{SCAN}) is:

$$MDA_{SCAN} = \frac{d' \times \sqrt{b_i} \times \frac{60}{i}}{E_I \times E_S \times \sqrt{p} \times \frac{A}{100}}$$

where MDA = Minimum detectable activity (dpm/100cm^2), d' = Decision error assumed to be 3.28 for Type I error (α) =0.05 and Type II error (β) =0.95, i = Observation counting interval (detector width divided by the scan speed), b_i = Background count per observation interval, E_I = Detector

[6] U.S. Nuclear Regulatory Commission, *Minimum Detectable Concentrations with Typical Radiation Survey Instruments for Various Contaminants and Field Conditions*, NUREG/CR-1507, December, 1997.

efficiency, E_s = Surface efficiency (assumed to be 10% for tritium contamination on lab surfaces), p = Surveyor efficiency (Assumed to be 50%), and A = Detector area (cm^2).[7,8,9]

3.7 Survey Unit Classification

Survey units are generally classified as Class l, 2, or 3. In general, a Class 1 survey unit is an impacted area where there are expected to be locations with concentrations of residual radioactivity that exceed the DCGL. A Class 2 survey unit is an impacted area where there may be locations with concentrations of residual radioactivity detectable above background but less than the DCGL. A Class 3 survey unit is an impacted areas where there are no expected locations with concentrations of residual radioactivity detectable above background.

The adjacent rooms (242 and 243) of the Smith Science Building were combined to create one survey unit. Room 242 is actually encompassed by Room 243, with access to both rooms being through a single door.

Based on the historical assessment and past radiological surveys, Rooms 242 and 243 meet the criteria for a Class 2 survey unit. However, to satisfy the criteria set forth in NUREG-1757, Appendix B "*Simple Approaches for Conducting Final Radiological Surveys*", the survey was conducted assuming it was a Class 1 survey unit.[10] The floors, benchtops, sinks, and walls in this room to a height of two (2) meters from the floor were designated Class 2, and the upper walls (i.e., greater than two meters above the floor) and ceiling were designated as non-impacted.

3.8 Survey Procedures

The final status survey of the rooms consisted of surface scans for tritium, stationary counts for tritium, and the collection of surface smears for assessment of removable activity. The surveys were performed as described in the following subsections.

3.8.1 Surface Scans

Tritium scans were performed over 100% of the accessible building surfaces. The detector was maintained at a distance of less than one(1) centimeter from the surface. Scan speeds of five (5) centimeters per second were established such that contamination at levels of less than 50% of the DCGL were detectable. the scanning results are shown in Table 7.8 of this report.

3.8.2 Direct Measurements

Biased direct measurements were made on the floors and lower walls of the Class 1 survey unit. Direct measurements were also made on the bench tops and cabinets located in the rooms. Measurement locations were selected based upon the professional judgement of the surveyor as to which were most likely to be impacted. Additional measurements beyond the required measurement locations were acquired as applicable.

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[7] NUREG/CR-1507, Table 7.1, *Values of d' for Selected True Positives and False Positive Proportions.*

[8] ISO-7503 recommends using a surface efficiency based on the type of radiation and radiation energy in the absence of experimentally derived values. A surface efficiency of 0.10 is recommended for tritium detection when using the Ludlum 44-110 probe.

[9] International Organization for Standardization (ISO), *Evaluation of Surface Contamination*, ISO 7503, 1988.

[10] U.S. Nuclear Regulatory Commission, *Consolidated Decommissioning Guidance Characterization, Survey, and Determination of Radiological Criteria*, Appendix B, NUREG 1757, Volume 2, Rev 1, September, 2006.

Measurements were conducted by allowing the gas-filled detector to stabilize over a (1) one minute period and then documenting the meter reading. The material-specific background was subtracted and the activity in units of dpm/100cm^2 was calculated. Table 7.7 and Appendix 8.4 of this report contain the survey results. Material specific background measurements are found in Appendix 8.3 of this document.

3.8.3 Removable Activity Measurements

Smears for removable radioactivity were collected at each direct measurement location and analyzed for removable tritium by liquid scintillation counting at a commercial analytical laboratory pursuant to USEPA Test Method 906.1. Each polyfoam smear was rubbed in direct contact with the surface and dissolved in the scintillation cocktail on site. The samples were analyzed and the results, reported in units of dpm/100cm^2 (see Table 7.9 and Appendix 8.5).

4 RESULTS

Once the surveys were complete, data were reviewed to ensure they were acquired pursuant to the provisions of the survey plan. The following requirements were confirmed:

- The instruments used to collect the data were capable of detecting the radiation of interest at or below the DCGL;
- The calibration status of the instruments used to collect the data was less than twelve months old;
- Instrument response was checked with satisfactory results before the instrument was used;
- The MDAs and assumptions to develop them are appropriate for the instruments and the survey methods used to collect the data;
- The final survey data set consisted of qualified measurement results that were representative of the current facility status and collected as prescribed in the survey plan; and
- The data were properly recorded.

No discrepancies were identified during data review, thus the data set was deemed valid by both the Project Manager and the Project CHP. Appendix 8.4 contains the Radiation Survey Forms and results for each of the rooms identified in Table 7.1. The data points, summarized in Tables 7.7 through 7.9, demonstrate that the residual radioactivity in all of the rooms are below the applicable release criteria.

5 WASTE DISPOSITION

5.1 Bulk Waste

Research activities at the Smith Science Building generated a small volume of aqueous radioactive waste. From June 9, 2006 to December 19, 2006 WVSOM staff discharged 0.43 millicuries of tritium into to the sanitary sewer system via the sink in Room 243. All discharges were performed in accordance with the requirements of 10CFR20.2003 "Disposal by release into sanitary sewerage".

The remaining inventory, totaling 2.57 millicuries of laboratory waste (i.e., paper, plastic, pipettes, gloves), was packaged and sent to the Toxco Materials Management Center in Oak Ridge, Tennessee. As of the date of this report, the waste is awaiting final disposition.

Appendix 8.6 contains a copy of NRC Form 540 showing acceptance of the packaged waste at the Toxco Materials Management Center. The certificate of disposal, once received from the disposal site, will be forwarded to the WVSOM for their permanent records.

5.2 Other Radioactive Material

The WVSOM owns a Wallac 1450-471 normalization standard for use with its liquid scintillation counter. This exempt-quantity source, which contains less than 10 kBq (0.27 microcurie) of tritium and less than 6 kBq (0.16 microcurie) of Carbon-14, is stored in Room 243 of the Smith Science Building. The WVSOM intends to transfer the liquid scintillation counter and the standard to another user at some time in the future. The records of disposition of the standard will be maintained as part of the decommissioning records for the site.

6 SUMMARY AND CONCLUSIONS

On February 17-18, 2009, a final status survey of the Smith Science Building at the West Virginia School of Osteopathic Medicine in Lewisburg, West Virginia was performed. The instruments and survey methodologies used were consistent with standard industry practice, with all results and supporting documentation included herein as attachments. No residual radioactivity above the DCGL applicable to this project (i.e., $1.2x10^8$ dpm/100 cm^2) was identified. The maximum activity detected in any one location is 0.00003% of the established screening value. Therefore, subject to regulatory approval, this site may be released for unrestricted use.

7 TABLES

Table 7.1 - Radioactive Material Usage/Storage Areas

Room**	Purpose	Equipment Used	Status
Room 243	Biomedical research. No human use.	Pipette, syringes, rubber tubes, lab bench, refrigerated storage, solid waste containers,, and ancillary equipment/materials, as necessary.	Subject to FSS
Room 242	Housed Liquid Scintillation Counter at the time of license application. LSC moved to Room 243 prior to use of radioactive materials. Room 242 is open and adjacent to Room 243.	None	Subject to FSS
Storage Closet Room 124	Storage of radioactive waste.	Waste double bagged in Room 243. Placed in 55 gallon drum in Room 243. Drum moved to storage closet	Not subject to FSS. Scans, direct measurements and smears performed.

Table 7.2 - Radioactive Materials Inventory

Radionuclide	Form	Activity acquired	Use	Status
Tritium (H-3)	Liquid stock	1 millicurie	Research and development. **No human use.**	Drain disposal and laboratory waste disposed of as Radioactive Waste.
Tritium (H-3)	Liquid stock	1 millicurie	Unused	Not used. Disposed of as Radioactive Waste.
Tritium (H-3)	Liquid stock	1 millicurie	Unused	Not used. Disposed of as Radioactive Waste.

Table 7.3 - Listing of Rooms Subject to Survey

Smith Science Building Room	Area (square meters)
Room 242	27.1
Room 243	72.6

Table 7.4 - Source Term and Derived Concentration Guideline Levels

Radionuclide	Half Life	Principal Radiation	Radiation Energy, E_{max} (keV)	Derived Concentration Guideline Levels (dpm/100 cm^2)**
Tritium (H-3)	12.3 years	Beta	18.6	1.2×10^8

** The screening values for unrestricted use of building surfaces are provided in NUREG-1757 and NUREG-5512 such that the potential radiation dose to the critical population is less than 25 millirem per year.[11,12]

[11] U.S. Nuclear Regulatory Commission, *Consolidated Decommissioning Guidance Characterization, Survey, and Determination of Radiological Criteria*, Table H.1, NUREG 1757, Volume 2, Rev 1, September, 2006.

[12] U.S. Nuclear Regulatory Commission, *Residual Radioactive Contamination From Decommissioning - Parameter Analysis*, Table 5.19, NUREG 5512, Volume 3, Draft, October, 1999.

Table 7.5 - Survey Instrument Descriptions

Make	Rate Meter Model	Detector Model	Detector Type	Radiation Detected	Calibration Source	Use
Ludlum	12	44-110	Windowless gas flow proportional detector	Beta, as low as 18.6 Kev	^{99}Tc/H-3	Direct tritium surveys; Tritium scan on solid surfaces

Table 7.6 - Survey Instrument Detection Limits

Detector Model	Media	Background(1)	Detector Efficiency (c/dis)(2)	Sensitivity (dpm/100cm²)	
				Scanning	Static Count (1 minute)
44-110	Laminate benchtop	288±17.9 cpm	0.51	7,622	158
	Drywall	284±16.7 cpm		7,569	157
	Painted concrete	296±16.7 cpm		7,727	160
	Painted cinder block	284±16.7 cpm		7,569	157
	Wood	264±16.7 cpm		7,298	152
	Metal	276±16.7 cpm		7,462	155
	Unpainted concrete	592±11 cpm		10,928	225

(1) Average of each individual type of material.
(2) Average of the daily efficiencies over the course of the survey effort.

Table 7.7 - Stationary (Static) Count Results

Room Number[1]	Number of Static Counts[2]	MDA (dpm/100 cm²)	Highest Static Readings (dpm/100 cm²)	Exceed the DCGL?
Room 243	26	Varying material 152-160	86	No
Room 242	6	Varying material 157-160	16	No
Storage Closet Room 124	6	Varying material 155-225	31	No

1 - Survey results for the counter tops in the rooms were all below the applicable DCGL. See Appendix 8.4 for results.
2- Each static count was accumulated for 1 minute.

Table 7.8 - Scan Results

Room Number	Scanning MDA dpm/100 cm²	Highest Scan Readings dpm/100 cm²	Exceed the DCGL?
Room 242	7,298 - 7,727	**	No
Room 243	7,569 - 7,727	**	No
Storage Closet Room 124	7,462 - 10,928	**	No

**Results not distinguishable from background (see Appendix 8.3, below)

Table 7.9 - Removable Contamination Results

Room[1]	Floor Results (dpm/100 sq. cm)			Wall Results (dpm/100 sq. cm)			Any Result Exceed the DCGL?
	Number	Mean	Max	Number	Mean	Max	
243	6	129.8±27.7	165.72	19	122.8±59.8	3883.02	No
242	3	89.9±8.0	93.65	4	99.6±39.5	748.63	No
124 closet	2	119.1±18.1	131.92	5	131.8±26.1	157.43	No

1 - Survey results for the counter tops in the rooms were all below the applicable DCGL. See Appendix 8.4 for locations of samples and Appendix 8.5 for results.
2- Includes benchtops, freezer, LSC, doorknobs
3- Two statistical outliers not applied to mean or standard deviation calculation for room 243; one statistical outlier not applied to mean or standard deviation calculation for room 242

8 APPENDICES

Appendix 8.1 - Qualifications of Project Personnel

Michael W. Kimbro - Project Manager

Professional Qualifications

Mr. Kimbro has over 22 years of experience in the radiation protection field, with emphasis on decontamination, decommissioning, site surveillance and applied health physics. His extensive field and management experience, design capabilities, training expertise, interpersonal skills, and technical abilities in the decontamination, decommissioning, and radiation protection fields are accompanied by excellent qualifications in project coordination, regulatory compliance, site characterization and radiological oversight and verification for U. S. Department of Energy, U. S. Army Corps of Engineers and U. S. Nuclear Regulatory Commission (or Agreement State) licensee sites.

Education

Santa Fe Community College, Gainesville, FL 1983, 1985-86

St. John's River Community College, Palatka, FL 1984-85

Miami-Dade Community College, Homestead, FL 1991

Florida Community College at Jacksonville, FL, Jacksonville, FL 1993

Columbus State Community College, Columbus, OH 1994-1996, 1999, 2001

Multiagency Radiation Survey and Site Investigation Manual (MARSSIM) Implementation and Design Course (40 hours), 2003.

Occupational Health and Safety Technologist Course (40 hours), 1996.

40-Hour OSHA HAZWOPER (29 CFR 1910.120) Training (2001) and eight-hour OSHA Annual Refresher (29 CFR 1910.120), current through 2009.

Asbestos Abatement Contractors/Supervisor Training (40 hours), 2002.

Hazardous and Radioactive Material/Waste Transportation Certification Training, 2008

Registrations/Certifications

Registered Radiation Protection Technologist (RRPT), National Registry of Radiation Protection Technologists.

Authorized User - Maryland Department of the Environment Radioactive Materials License No. MD-31-281-01.

Hazardous Material/Waste Transportation Training, current through 2011

Radioactive Material Transportation Training, current through 2009.

ANSI-Qualified 3.1 Senior Health Physics Technician (continual since 1989)

U. S. Department of Energy "L" Security Clearance (*expired*).

Department of Energy Radiological Control Technician Qualification, 2003-2007.

Experience and Background

2008-Present *Project Manager and Health Physics Technician, Integrated Environmental Management, Inc., Knoxville, Tennessee* - Duties include decontamination work plans and Final Status Survey Plan development and performance, with particular emphasis on MARSSIM style surveys, radioactive waste packaging and transportation, radiation safety program instruction and audits, surveillance activities, site characterization and risk assessment, report preparation, cost/schedule assessment, research/analysis, and general health physics duties. Mr. Kimbro serves as the Program Manager for IEM's instrumentation rental program. Mr. Kimbro is also qualified as a Health Physics Technician pursuant to Radiation Safety Procedure No. RSP-006, "Training and Qualification of Radiation Protection Personnel".

2006-2007 *Senior Health Physics Technician, Various DOE, FUSRAP, Commercial Power Facilities, and University Sites* - Performed HP support activities in varying capacities. Projects included final status surveys, decontamination and decommissioning, and power reactor refueling/maintenance.

2006 *Remediation Field Coordinator, Key West Naval Base Remediation Project, Key West, Florida* - Scheduled and produced daily activity/man-power reports for the heating, ventilation, air conditioning (HVAC), and plumbing remediation during the Hurricane Wilma remediation of over 500 properties at the Key West Naval Base.

2002-2005 *Corporate Health Physics Specialist, Safety and Ecology Corporation, Knoxville, Tennessee* - Provided corporate Health Physics oversight, radiological engineering, and project development on numerous remediation projects nationwide. Corporate lead for radiologically related training projects. Involved in all aspects of D&D projects from proposal stage, to planning, performance, and final reports. Served on various project management teams as radiological issues representative. Authored numerous plans, procedures, work instructions and technical basis documents for corporate interest and clients. Served as primary Emergency Responder concerning radiological issues.

2001-2002 *Senior Radiological Controls Technician, British Nuclear Fuels Ltd., Oak Ridge, Tennessee* - Provided operational Health Physics and Industrial Hygiene support during the Three Building D&D Project (K-29, K-31, and K-33) at the East Tennessee Technology Park.

1993-2001 *Radiation Safety Specialist/Technical Support, Battelle Memorial Institute, Columbus, Ohio* - Provided operational Health Physics, ALARA, and technical support services for active Research and Development (R&D) projects as well as support to D&D activities at the BMI King Avenue and West Jefferson sites.

1987-1993 *Health Physics Technician, Various Commercial Nuclear Power Facilities* - Provided operational Health Physics coverage in varying capacities at 10 nuclear power facilities during 19 refueling and/or maintenance outages throughout the United States.

Awards

Safety and Ecology Corporation, Professional Services Employee of the Year, 2004

Example Project Descriptions

Project Manager for the radiological characterization, decontamination, and Final Status Survey of a facility that manufactured thorium fluoride for use as an optical surfacing product. Conducted radiation and contamination surveys to determine the extent and the magnitude of the radiological contamination. Prepared the state approved decontamination work plan and contributed to the state approved Final Status Survey Plan. Served as field Health Physicist during the decontamination and Final Status Survey. Coordinated the disposal of all waste generated during decontamination. Prepared the Final Status Survey Report in support license termination activities.

Project Manager/ Certified Shipper for numerous disposal activities. Responsible for DOT/IATA compliance issues regarding the transportation of radiative waste and sources.

ALARA Specialist/Technical Support for the decommissioning project of the hot cell facility, the sub-critical assembly building, and the research reactor building at Battelle Memorial Institute's West Jefferson North Site. These buildings, in particular, the fourteen hot cells were contaminated with an estimated 4,000 curies of mixed fission and activation products, as well as fuel residues and transuranics. Contributed to work plans and processes involving the off-load of numerous hot cells. Duties included pre and post-job reviews of activities, internal and external dose assessments, and shielding calculations for dose reduction.. Development of lessons learned documentation, pre-job exposure estimates, and exposure trending/ALARA goal reports. Prepared RWPs, including ALARA considerations for work packages.

Radiation Safety Services Technician for active Research and Development at Battelle Memorial Institute's Columbus, OH campus. Provided radiologically related technical support in the development of research study protocols including briefing and training research staff in specific radiation protection controls for each study. Client confidentiality limits study descriptions. Laboratory isotopes used include, but not limited to C-14, H-3, I-131, I-125, P-32, Ni-63, Tc-99m and Re-188. Provided routine radiological surveillance and surveys, as well as providing coverage for active studies, including radiolabeling of solutions and pharmaceutical. Performed 100's of radioactive source leak tests on sealed sources and laboratory equipment.

Radiological Specialist/Sample Coordinator for the Excess Material Project at the East Tennessee Technology Park (formerly the K-25 site), Oak Ridge, TN. Served as the Health Physics liaison between employer and client, Bechtel Jacobs Company. Authored radiological project plans and compliance documents. Provided radiological/ALARA engineering, as well as oversight for wasted handling and loading operations. Served as the sample coordinator for the radiological characterization of material. This encompassed over 4,000 samples and/or radiological surveys and associated data reports. Additionally, served as project QA specialist responsible for project assessments and audits, as well as trending and implementation of corrective actions of deficiencies.

Health Physicist/Project Manager for the radiological characterization, decontamination, and Final Status Survey of a research facility contaminated with Germanium-68. Conducted contamination surveys to determine the extent and the magnitude of the radiological contamination.. Served as field Health Physicist during the decontamination and Final Status Survey. Coordinated the disposal of all waste generated during decontamination. Prepared the Final Status Survey Report in support license termination activities.

Field Health Physicist for the risk assessment survey of warehouse facility with elevated levels of Naturally Occurring Radioactive Materials (NORM). Performed radiation and contamination surveys of the warehouse facility including the collection of sample media for radioactive analysis.

Radiological Engineer/ALARA Specialist at for the New Hydrofracture Facility D&D at the Oak Ridge National Laboratory. The facility was contaminated with an abundance of isotopes including Cs-137, Sr-90, and transuranics. Contributed to the work plans and processes used for the safe dismantlement of the facility. Developed ALARA goals and exposure reduction methods. Provided radiological oversight as well as personnel and day to day activity management as a part of the project management team.

Project Manager for Radiation Worker training for corporate employer. Responsible for the development of lesson plans, test and answer development, grading, records management, ensuring the proper maintenance and integrity of examination test banks and quality assurance of all documentation. Instructor for over thirty classroom sessions.

Health Physics Specialist at the abandoned Gulf Nuclear radioactive source manufacturing facility in Webster, TX. Acted as liaison/corporate representative between employer and the client, Shaw/US Army Corps of Engineers during the health physics support transition phase from one subcontractor to another. Performed interviews with management and operations personnel to establish project status and to assist in the operations planning phase. Additionally, performed procedural audits and instrumentation/ source inventory and training,

Health Physics Lead for the MARSSIM type final status survey of a facility machining Magnesium/Thorium alloys at Sermatech Power Solutions, Inc. (a.k.a. Airfoils Technologies Florida, Inc) in Boynton Beach, FL. Served as primary interface with the client and state regulators on the performance of survey activities. Compiled all data and authored the Final Status Survey Report for license termination.

Health Physics Lead for the characterization and MARSSIM final status survey of laboratory facilities contaminated with Sr-90 and Am-241 at the Oak Ridge Institute for Science and Education. Provided health physics operational support for decontamination activities, as well as serving as primary client interface.

Senior Health Physics Technician at the DOE Hanford Site K-Reactor Basin Closure Project. Provide operational HP coverage for the removal of debris (including fuel handling equipment) and sludge from the reactor basins (fuel pools) as part of bulk containerization activities.

Health Physics Technician at the University of Washington (Seattle) Research Reactor. Performed MARSSIM type Final Status Survey of the reactor building and associated buildings in support of license termination.

Procedure writer for Knoxville, TN engineering firm, S&ME. Reviewed firm's laboratory and radioactive source user program and authored complete radiological procedures compliant with the Tennessee Bureau of Environmental Health Services, Division of Radiological Health.

Senior Health Physics technician at the US Army Corps of Engineers St. Louis Airport Project Site, the Hazelwood Interim Storage Site, and the Latty Avenue Vicinity Properties. Identified areas requiring remediation by use of gamma walk-over surveys using Trimble

Global Positioning Systems and collection of environmental media.. Guided excavation activities based on these results.

Radiological Emergency Responder at the Norfolk Southern Railyard in Elkhart, IN. Responded to unknown condition identified radiation by detection system alarm. Identified the cause of the alarm, identified the contaminant and magnitude, and remediated the effected area.

Industrial Hygiene Technician at the Environmental Management Waste Management Facility in Oak Ridge, TN. Performed Beryllium sampling and packaged samples for lab analysis.

Radiological Emergency First Responder at multiple nuclear sites.

Senior Radiological Controls Technician at the East Tennessee Technology Park's Three Building Project. Provided operational HP and Industrial Hygiene support for the BNFL SuperCompactor and other D&D operations. Served as HP representative during scheduling/planning of SuperCompactor maintenance shut-down.

Senior Health Physics Technician for the characterization/scoping of the Ford Nuclear Reactor at the University of Michigan

ANSI Qualified 3.1 Senior Health Physics Technician at numerous commercial power facilities. Provided operational Health Physics coverage for most of any number of tasks common to commercial reactor refueling and maintenance. These tasks include, but not limited to refueling floor operations such reactor head removal and replacement, refueling/fuel movement, reactor head inspection, cavity decontamination. Additionally, provided coverage for steam generator inspections and tube plugging, valve and piping replacements, reactor coolant pump repair and/or replacement. Provided coverage for balance of plant operations including waste processing, transportation, auxiliary building activities, and turbine deck operations.

Developed numerous business proposals for nuclear decommissioning and decontamination projects including job walk downs, cost estimation, scheduling, and technical content of proposals.

Carol D. Berger - Project CHP

Professional Qualifications

Ms. Berger has over 30 years experience in nuclear and radiological activities with emphasis in strategic planning, radiation dosimetry, instrumentation, and applied health physics. As a co-founder of Integrated Environmental Management, Inc. (**IEM**), Ms. Berger is actively involved in performance of radiological dose assessments, regulatory interactions, site decommissioning, program evaluations, program development, pathway analyses, risk assessments, dosimetry evaluations, assessment and control of sources of non-ionizing radiations, waste management programs, environmental monitoring programs, and detection and quantification of low-levels of radioactivity.

Education

M.S., Health Physics, San Diego State University, San Diego, California; 1979

M.S., Radiation Physics, San Diego State University, San Diego, California; 1977

B.S., Physics/Chemistry, San Diego State University, San Diego, California; 1972

Certifications

Certified Health Physicist (Comprehensive), American Board of Health Physics, 1983 (Re-certified through 2011)

Alternate Radiation Safety Officer - Maryland Department of the Environment Radioactive Materials License No. MD-31-281-01.

Authorized User - Maryland Department of the Environment Radioactive Materials License No. MD-31-281-01.

Radiation Health Physicist Registration - Cabinet for Health Services, Commonwealth of Kentucky, Certificate No. 3013.

Maryland Department of the Environment - Service Registration No. 358-000.

U. S. Department of Energy "Q" Security Clearance (*expired*).

Experience and Background

1994-Present *President and Founder, Integrated Environmental Management, Inc., Gaithersburg, Maryland.* Provides high-quality strategic environmental management services to commercial and government clients. As a member of the client's response team, works with clients to promote an understanding of what is required to achieve and/or maintain compliance in the eyes of all pertinent regulatory agencies, individually or jointly; develop an overall strategy for achieving compliance and reduce liabilities in a technically-sound, legally-defensible, and fiscally-conservative business manner; recommend specific solutions that are compatible with the client's operating philosophy; and provide insights into future regulatory issues and their impact as input to the client's long-range business planning and cost forecasting process.

1989-1994 *Senior Technical Consultant, IT Corporation/Nuclear Sciences, Washington, D.C.* - Performed health physics consulting for government and commercial facilities in Internal and External Dosimetry; Radiation Monitoring; Environmental Monitoring; Instrumentation; Emergency Response and Preparedness; Site Decommissioning; Radioactive Waste Management; Radiation Risk Assessment; Training; Licensing and Regulatory Negotiations; and Non-ionizing Radiation

1986-1989 *Senior Health Physicist, IT Radiological Sciences Laboratory, Knoxville, Tennessee* - Performed health physics consulting for government and commercial facilities in Internal and External Dosimetry; Radiation Monitoring; Environmental Monitoring; Applied Health Physics; Instrumentation; Radioactive Waste Management; Training; and Non-ionizing Radiation.

1983-1986 *Radiation Dosimetry Group Leader, Oak Ridge National Laboratory, Oak Ridge, Tennessee.* Responsible for internal and external dose assessment and programs for ORNL employees, visitors and contractors. Experience included Internal and External Dose Assessment; Monitoring Program Design and Implementation; Instrumentation Development; Site Characterizations; Personnel Management; and Training.

1978-1983 *Internal Dose Group Leader, Oak Ridge National Laboratory, Oak Ridge, Tennessee.* Responsible for development of the ORNL Whole Body Counter Facility for detection and quantification of the actinides in-vivo. Experience included: Internal Dose Assessment; Monitoring Program Design and Implementation; Instrumentation Development; Special Studies; Personnel Management; and Training.

1978-1986 *Adjunct Faculty, Oak Ridge Associated Universities, Oak Ridge, Tennessee* - Professional training courses and general classes in the following health physics and radiation protection areas: Internal Dose Assessment; In-vivo Monitoring and Bioassay Methodologies; Instrumentation, and Applied Health Physics.

1979-1980 *Health Physics and Dosimetry Task Group Member, President's Commission on the Accident at Three Mile Island, Washington, D.C.* Tasks included: Internal Dose Assessment from Whole Body Counting Results; Estimates of Source Term from in-plant Monitoring Systems; Atmospheric Dispersion Modeling and Population Dose Assessment; and Development of Health Physics Sequence of Events.

Professional Society Membership

American Academy of Health Physics (President, 1995; Executive Committee, 1995-1997; Chair of Strategic Planning Committee, 1997; Chair of Professional Standards and Ethics Committee, 2003-2006)

National Council on Radiation Protection and Measurements (Program Area Committee 2 on Operational Radiation Safety, 2008-2011)

Health Physics Society (Fellow Member, 2006; Publications Committee, 1999-2001)

Baltimore-Washington Chapter, Health Physics Society (Treasurer, 1993-1994, Board of Directors, 1998-2000)

American Bar Association (Natural Resources, Energy, and Environmental Law)

Environmental Law Institute

Publications

Over 30 professional publications; over 40 oral presentations; over 100 technical reports; over 25 training courses taught.

Other/Past Appointments/Awards

American Academy of Health Physics - Third recipient of the *Joyce B. Davis Memorial Award* for professional achievement and ethical behavior in the practice of health physics (July, 2006, Providence, Rhode Island).

East Tennessee Chapter - Health Physics Society (President, 1986; President-Elect, 1985; Secretary, 1981-1982).

San Diego Chapter - Health Physics Society (Charter member).

American Board of Health Physics, Comprehensive Panel of Examiners (1989-1993).

ANSI Standards Committee (ANSI N13.41) on Multiple Dosimetry; Chair of Reaffirmation Working Group (2007 to present).

ANSI Standards Committee (ANSI N13.41) on Multiple Badging; 1986 to 1996 (Chairman, PlanCo-59 Working Group, 1990 to 1996).

ANSI Standards Committee (ANSI N13.39) on Internal Dosimetry Programs (1994 to 2001).

ASTM Task Group E-10.04.27 "Transuranic Wound Analysis" (1986 to 2000).

National Council on Radiation Protection and Measurements (NCRP) Scientific Committee 46-10, "Assessment of Occupational Exposures from Internal Emitters" (1989-1995).

Purdue University, Health Sciences Advisory Council for the School of Health Sciences (1995-1998).

DOE/IAEA Whole Body Counter Intercalibration Committee (1980-1986).

Consultant to Knoxville Academy of Medicine, Mass Casualty Simulation (1984-1985).

Consultant to the National Cancer Institute to Evaluate Devices and Techniques to Determine Previous Radiation Exposure under Public Law 98-54 (Award for participation presented by Oak Ridge Associated Universities in April, 1988.).

Steering Committee Member, U. S. Department of Energy Task Group on the Education of Future Health Physicists (1989-1991).

Technical reviewer and referee for Health Physics, Nuclear Technology, and Radiation Protection Management.

IT Corporation Distinguished Technical Associate - June, 1992.

Appendix 8.2 - Field Activity Daily Logs

INTEGRATED ENVIRONMENTAL MANAGEMENT, INC.
FIELD ACTIVITY DAILY LOG

Facility: SMITH SCIENCE Bldg. (WVSOP)	
Date: FEB. 17 2009	Job/Task Number: 2008.019.01
Client Name: West Virginia School of Osteopathic Medicine	
Address of Work Site: 400 NORTH LEE STREET Lewisburg, WV	
Description of Work: Final Status Survey / Disposal of Waste.	

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS

Arrived on site at (insert date and time): FEB 17 2009 / 0830

0830 → 0850 Met with Dr. John Schriefer, RSO. Toured facility
Discussed survey & emergency procedures.
0850 → 0915 Unpacked; set-up instruments
0915 → 1200 Established backgrounds (Materials) in non-impacted room 202. Began survey of Room 243.
1200 → 1300 LUNCH
1300 → 1630 Continued survey of Room 243. Performed historical review of lab records (inventory, disposal, & use). Called Carol Berger concerning disposition of LSC standard (exempt quantity).
1615 Pack equipment; stabilize work area
1630 Exit Facility

N/A

Departed site at (insert date and time): FEB. 17, 2009 / 1630

Changes from Plans and Specifications, and Other Special Orders and Important Decisions:
No changes.
- LSC Standard is exempt quantity & should stay with LSC.

Weather Conditions: MORNING 14°F SUNNY PM - 30's and SUNNY	Important Telephone Calls and Interactions: Called Carol Berger
Personnel on Site: Michael Kimbro (IEM) Dr. John Schriefer (WVSOM)	
Name (print): Michael Kimbro	Signature: Michael Kimbro

INTEGRATED ENVIRONMENTAL MANAGEMENT, INC.
FIELD ACTIVITY DAILY LOG

Facility: Smith Science Building (WVSOM)	
Date: Feb. 18, 2009	Job/Task Number:
Client Name: West Virginia School of Osteopathic Medicine	
Address of Work Site: 400 North Lee Street Lewisburg, WV	
Description of Work: Final Status Survey / Disposal of Waste	

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS

Arrived on site at (insert date and time): Feb 18, 2009 0900

0900 - Met with Dr. Schriefer. Begin work in storage closet in Room 124. Set up instruments. Performed FSS.
1100 - Moved work location to room 242. Performed FSS.
1230 - Moved work to Room 243. Completed FSS.
1400 - Demobilize; pack equipment. Exit interview with Dr. Schriefer
1430 - Exit site.

N/A

Departed site at (insert date and time): Feb. 18, 2009 / 1430

Changes from Plans and Specifications, and Other Special Orders and Important Decisions:
No changes.

Weather Conditions: Mid 30's F. Rainy with sleet	Important Telephone Calls and Interactions: NONE
Personnel on Site: Michael Kimbro (IEM) Dr. John Schriefer (WVSOM)	
Name (print): Michael Kimbro	Signature: Michael Kimbro

Appendix 8.3 - Instrumentation Records

Designer and Manufacturer of Scientific and Industrial Instruments

CERTIFICATE OF CALIBRATION

LUDLUM MEASUREMENTS, INC.
POST OFFICE BOX 810 PH. 325-235-5494
501 OAK STREET FAX NO. 325-235-4672
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER INTEGRATED ENV MGMT — ORDER NO. 20127201/333999 (20126753/332465)

Mfg. Ludlum Measurements, Inc. Model 12 Serial No. 121268
Mfg. Ludlum Measurements, Inc. Model 44-110 Serial No. PR-123286
Cal. Date 29-Jan-09 Cal Due Date 29-Jan-10 Cal. Interval 1 Year Meterface 202-356

Check mark ☑ applies to applicable instr. and/or detector IAW mfg. spec. T. 75 °F RH 32 % Alt 700.8 mm Hg

☐ New Instrument Instrument Received ☐ Within Toler. +-10% ☐ 10-20% ☐ Out of Tol. ☑ Requiring Repair ☐ Other-See comments

☑ Mechanical ck. ☑ Meter Zeroed ☐ Background Subtract ☐ Input Sens. Linearity
☑ F/S Resp. ck ☑ Reset ck. ☐ Window Operation ☑ Geotropism
☑ Audio ck. ☐ Alarm Setting ck. ☑ Batt. ck. (Min. Volt) 2.2 VDC
☑ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89. ☐ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 1625 V Input Sens. 4 mV Det. Oper. 1625 V at 4 mV Threshold Dial Ratio = mV

☑ HV Readout (2 points) Ref./Inst. 500 / 500 V Ref./Inst. 2000 / 2012 V

COMMENTS:
Calibrated with a 39" cable.

Gamma Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL. POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
X 1000	400Kcpm	N/A	400
X 1000	100Kcpm		100
X 100	40Kcpm		400
X 100	10Kcpm		100
X 10	4Kcpm		400
X 10	1Kcpm		100
X 1	400cpm		400
X 1	100cpm		100

*Uncertainty within ± 10% C.F. within ± 20% — ALL Range(s) Calibrated Electronically

Digital Readout: REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*	Log Scale: REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323-1978. State of Texas Calibration License No. LO-1963

Reference Instruments and/or Sources: ☐ S-394/1122 ☐ 1131 ☐ 781 ☐ 059 ☐ 280 ☐ 60646
Cs-137 Gamma S/N ☐ 1162 ☐ G112 ☐ M565 ☐ 5105 ☐ T1008 ☐ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/N T-304
☐ Alpha S/N ☑ Beta S/N Tc99sn:5296-04, H3 SN: 306 Other
☑ m 500 S/N 50800 ☐ Oscilloscope S/N ☑ Multimeter S/N 83990502

Calibrated By: Charles [signature] Date 29 Jan 09
Reviewed By: Donnie Mieras Date 30-Jan-09

FORM C22A 10/15/2008

AC Inst. Only ☐ Passed Dielectric (Hi-Pot) and Continuity Test ☐ Failed:

Designer and Manufacturer
of
Scientific and Industrial
Instruments

LUDLUM MEASUREMENTS, INC.
POST OFFICE BOX 810 PH. 325-235-5494
501 OAK STREET FAX NO. 325-235-4672
SWEETWATER, TEXAS 79556, U.S.A.

Bench Test Data For Detector

Detector 44-110 Serial No. PR-123286

20120753/332465

Customer INTEGRATED ENV MGMT Order #. 20127201/333999

Counter 12 Serial No. 21268 Counter Input Sensitivity 4 mV

Count Time Cpm Distance Source to Detector Surface

Other Calibrated w/ 32" cable

High Voltage	Background	Isotope H3 Size 2375 dpm	Isotope Tc99 Size 33200 dpm	Isotope Size	Isotope Size
1550	250	500	17000		
1575	300	800	18000		
1600	300	1000	18000		
– 1625	300	1200	19000		
1650	350	1300	19000		
1675	450	1400	20000		

Signature Charles Fish Date 29 Jan 09

FORM C4A 04/09/2003

INTEGRATED ENVIRONMENTAL MANAGEMENT, INC.
CONTAMINATION SURVEY INSTRUMENT DATA SHEET

Project No: 2008019.01			Detector			Meter		
Site Location/Background Location: SMITH SCIENCE BUILDING ROOM 202			Type: LUDLUM 44-110	Serial No. 123286	Probe Area (cm^2) 100	Type: LUDLUM 12	Serial No: 121268	Operating Voltage: 1625
Check Source No: 2398-98			Check Source No: N/A			Check Source No: N/A		
Radionuclide: Tc-99	Activity: 19200dpm	Date: 8-6-98	Radionuclide:	Activity: N/A	Date:	Radionuclide:	Activity: N/A	Date:

Date	Start of Shift Background (cpm for a 1 minute count) Alpha 1	Alpha 2	Alpha 3	Alpha Av.	Beta 1	Beta 2	Beta 3	Beta Av.	End of Shift Background (cpm for a 1 minute count) Alpha 1	Alpha 2	Alpha 3	Alpha Av.	Beta 1	Beta 2	Beta 3	Beta Av.	Daily Source Check (α) Source (cpm)	Eff.	Daily Source Check (β) Source (cpm)	Eff.	MDA** - Scaler Mode (dpm) α	β	Bat. OK	HV OK	Initials
2/17	—	N/A	—	—	320	320	320	350	—	N/A	—	—	360	370	360	360	~~2,000~~ MK N/A		12,000	*	N/A		✓	✓	MK
2/18	—	N/A	—	—	370	360	350	340	—	N/A	—	—	320	320	370	360	N/A		12,000	*	N/A		✓	✓	MK

2001

N/A

** $MDA = \frac{2.71 + 4.65\sqrt{BKG_{avg} \times t}}{t \times E \times \frac{A}{100}}$, where MDA = the activity level (dpm/100 cm^2), BKG_{avg} = the background count rate for this measurement type (cpm), t = the sample measurement duration (min), E = the 4-π instrument efficiency, and A = the physical probe area (cm^2).

* Tc-99 used as comparative surrogate. Additional pages will show efficiencies and MDA's.

INTEGRATED ENVIRONMENTAL MANAGEMENT, INC.

RADIOLOGICAL SURVEY FORM

Survey Number 2008019.01 - 1 | Page 1 of 1

Instrument/SN: Ludlum 12 / 121268	Calibration Due: 01-29-2009	Site Name: West Virginia School of	Date:	Time:
Instrument/SN Ludlum 44-10 / [illegible]	Calibration Due: 01-29-2009	Location: Osteopathic Medicine Lewisburg, WV	2/17/2009	1200
Instrument/SN N/A	Calibration Due: N/A	Purpose: Background Measurements Final Status Survey
Survey Performed By (Signature): Michael Kimbro [signature]		Survey Checked By (Signature): [signature]
☑ Battery OK ☑ HV OK	☑ Source Check OK	Grid Dimensions: N/A x N/A ☐ meters ☐ feet ☐ inches ☐ centimeters

Row 1: Non-impacted AREA Material background information: Room 202

Material	Average	Readings	Material	Average	Readings
Laminate benchtop	(Avg. 288 cpm)	260 cpm, 280 cpm, 300 cpm, 300 cpm, 300 cpm	Wood cabinets	264 cpm average	240 cpm, 260 cpm, 260 cpm, 280 cpm, 280 cpm
Drywall	284 cpm average	260 cpm, 300 cpm, 300 cpm, 300 cpm, 280 cpm	Metal sink	276 cpm Average	260 cpm, 260 cpm, 280 cpm, 300 cpm, 280 cpm
Painted concrete floor	296 cpm average	320 cpm, 280 cpm, 300 cpm, 280 cpm, 300 cpm	Unpainted concrete floor (Room 124)	592 cpm average	600 cpm, 600 cpm, 580 cpm, 580 cpm, 600 cpm
Painted Cinder Block	284 cpm average	300 cpm, 300 cpm, 280 cpm, 280 cpm, 300 cpm			

Notes: All measurements taken in the Smith Science Building
400 North Lee Street Lewisburg, WV 24901

IEM
Integrated Environmental Management, Inc.

Project No. 2008019.01	Page 1 of 1
Subject: JUSTIFY INSTRUMENT EFFICIENCY	
Performed By: M Kimino	Date: 2/13/2009
Checked By: Carl D Berger	Date: 3/2/2009

- DETERMINE H-3 EFFICIENCY USING TC-99 SOURCE
  - → COMPARE LUDLUM'S TC-99 efficiency to H-3 efficiency
  - → Compare IEM'S TC-99 efficiency to Ludlum's TC-99 efficiency.

Ludlum Model 12 #121268 w/44-116 Probe #123286	FROM Ludlum BENCH TEST DATA DURING CALIBRATION (JAN. 29, 2009) @ 1625 volts		IEM TC-99 SOURCE #
KNOWN ACTIVITY (DPM)	3H CDB 3/2 33,200	99 Tc CDB 2,375	19,200
DETECTED ACTIVITY (DPM)	19,000	1,200	12,000
EFFICIENCY	0.572 = 0.57	0.505 = 0.51	0.625 = 0.63
+/- 10%	0.514 - 0.629 CDB	0.455 - 0.556 CDB	0.563 - 0.6875

- IEM TC-99 EFFICIENCY GREATER BY 0.053
- IEM SOURCE REPLICATES LUDLUM DATA WITHIN 10%.
- USE ~~50%~~ H-3 EFFICIENCY (CONSERVATIVE)

51% CDB

Designer and Manufacturer of Scientific and Industrial Instruments

LUDLUM MEASUREMENTS, INC.
POST OFFICE BOX 810 PH. 325-235-5494
501 OAK STREET FAX NO. 325-235-4672
SWEETWATER, TEXAS 79556, U.S.A.

Bench Test Data For Detector

Detector: 44-110 Serial No. PR-123286 20120753/332465

Customer: INTEGRATED ENV MGMT Order #: 20127201/333999

Counter: 12 Serial No. 121268 Counter Input Sensitivity 4 mV

Count time: Cpm Distance Source to Detector Surface

Other: Calibrated w/ 39" cable

High Voltage	Background	Isotope U3 Size 2375 dpm	Isotope Tc99 Size 35200 dpm	Isotope Size	Isotope Size
1550	250	500	17000		
1575	300	800	18000		
1600	300	1000	18000		
1625	300	1200	19000		
1650	350	1300	19000		
1675	450	1400	20000		

Signature [signature] Date 27 Jan 09

FORM C26 [illegible]

282 CDB

IEM
Integrated Environmental Management, Inc.

Project No. 2008019.01	Page 1 of 2
Subject: SCAN MDA's	
Performed By: M Kimbro	Date: 3-11-2009
Checked By:	Date:

CALCULATION OF SCAN MDA's

$$MDA_{SCAN} = \frac{d' \times \sqrt{b_i} \times \frac{60}{i}}{E_I \times E_S \times \sqrt{p} \times \frac{A}{100}}$$

where MDA = Minimum detectable activity (dpm/100cm^2), d' = Decision error assumed to be 3.28 for Type I error (α) =0.05 and Type II error (β) =0.95, i = Observation counting interval (detector width divided by the scan speed), b_i = Background count per observation interval, E_I = Detector efficiency, E_s = Surface efficiency (assumed to be 10% for tritium contamination on lab surfaces), p = Surveyor efficiency (Assumed to be 50%), and A = Detector area (cm^2).[6,7,8]

i = 9 cm probe width / 4.5 cm per second (2 probe widths / second)
b_i = VARIOUS material backgrounds (cpm) / 30 observation intervals per minute
A = 100 cm^2

- LAMINATE bench top bkg = 288 cpm
  $MDA_{Scan} = \frac{3.28\sqrt{\frac{288}{30}} \times \frac{60}{2}}{(.51)(.10)(\sqrt{.5})(1)} = \frac{304.88}{0.04} = 7,622$ dpm/100cm^2

Drywall bkg = 284 cpm
Painted Cinder block bkg = 284 cpm
$MDA_{Scan} = \frac{3.28\sqrt{\frac{284}{30}} \times \frac{60}{2}}{(.51)(.10)(\sqrt{.5})(1)} = \frac{302.76}{0.04} = 7,569$ dpm/100cm^2

Painted Concrete FLOOR BKg = 296 cpm
$MDA_{Scan} = \frac{3.28\sqrt{\frac{296}{30}} \times \frac{60}{2}}{(.51)(.10)(\sqrt{.5})(1)} = \frac{309.09}{0.04} = 7,727.25$ dpm/100cm^2

Wood CAbinets BKg = 264 cpm
$MDA_{SCAN} = \frac{3.28\sqrt{\frac{264}{30}} \times \frac{60}{2}}{(.51)(.10)(\sqrt{.5})(1)} = \frac{291.90}{0.04} = 7,297.50$ dpm/100cm^2

IEM

Integrated Environmental Management, Inc.

Project No. 2008019.01	Page 2 of 2
Subject: SCAN MDAs	
Performed By: M Kimbro	Date: 3-11-2009
Checked By:	Date:

METAL BKG = 276 cpm

$$MDA_{scan} = \frac{3.28\sqrt{\frac{276}{30}\cdot\frac{60}{2}}}{(.51)(.10)(\sqrt{.5})(1)} = \frac{298.46}{0.04} = 7{,}461.50\ \frac{dpm}{100cm^2}$$

Unpainted Concrete Floor bkg = 592 cpm

$$MDA_{SCAN} = \frac{3.28\sqrt{\frac{592}{30}\cdot\frac{60}{2}}}{(.51)(.10)(\sqrt{.5})(1)} = \frac{437.11}{0.04} = 10{,}928\ \frac{dpm}{100cm^2}$$

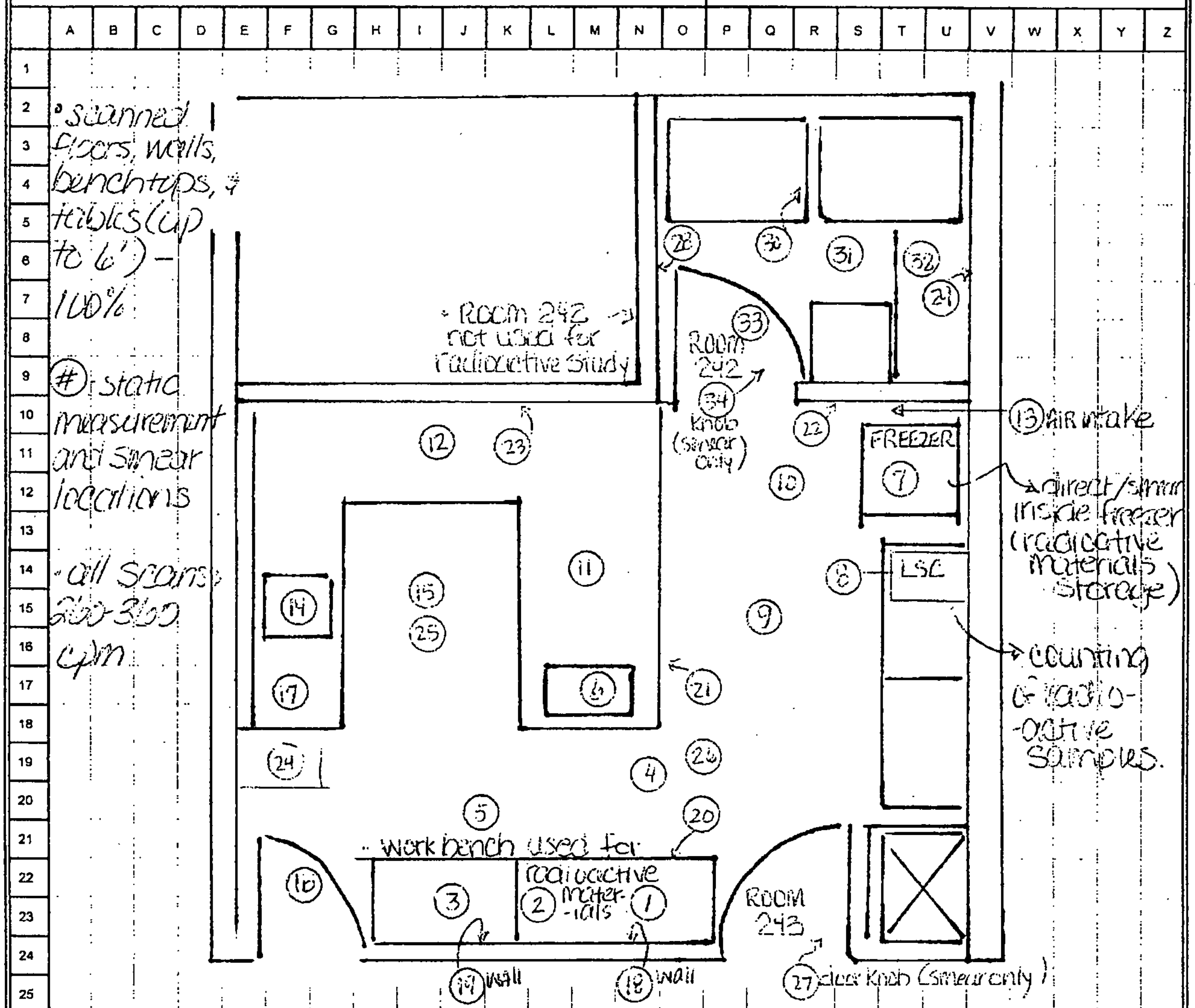
Appendix 8.4 - Field Survey Records

INTEGRATED ENVIRONMENTAL MANAGEMENT, INC.

RADIOLOGICAL SURVEY FORM

Survey Number 2008019.01-2

Instrument/SN: Ludlum 12/121268	Calibration Due: 01-29-2009	Site Name: West Virginia School of Osteopathic Medicine — Date: 02/17-18/2009 — Time: 1201
Instrument/SN: Ludlum 44-110/123786	Calibration Due: 01-29-2009	Location: Lewisburg, WV
Instrument/SN: N/A	Calibration Due: N/A	Purpose: Final Status Survey
Survey Performed By (Signature): Michael Kimbro — *Michael Kimbro*		Survey Checked By (Signature): [signature]
☒ Battery OK ☒ HV OK ☒ Source Check OK		Grid Dimensions: N/A x N/A ☐ meters ☐ feet ☐ inches ☐ centimeters



Notes: See page 3 of this survey for location descriptions and direct measurement results.

INTEGRATED ENVIRONMENTAL MANAGEMENT, INC.
RADIOLOGICAL SURVEY FORM

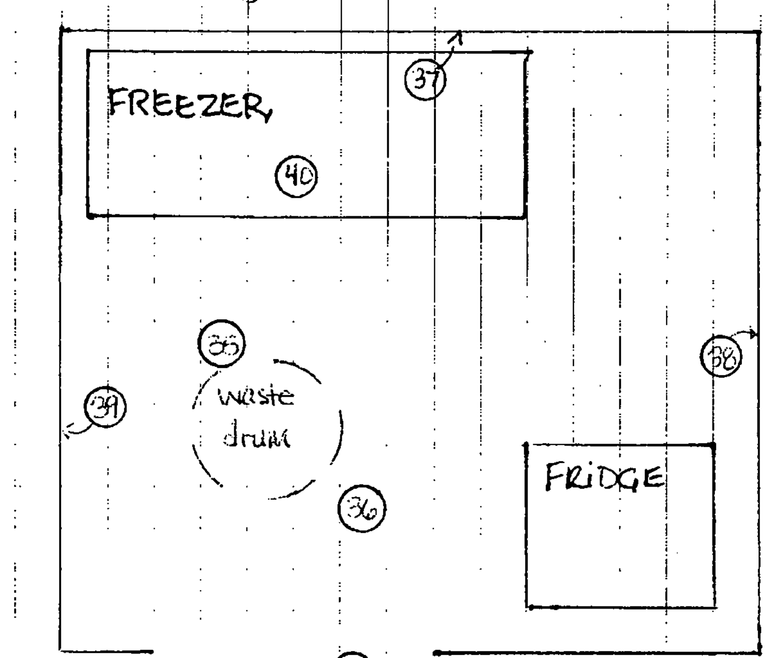
 (MK 2/23/09)

Survey Number 2008019.01-2

Instrument/SN: Ludlum 12/121268	Calibration Due: 01-29-2009	Site Name: West Virginia School of Osteopathic Medicine — Date: 2/18/09 — Time: 1130
Instrument/SN Ludlum 44-110/133226	Calibration Due: 01-29-2009	Location: Lewisburg, WV
Instrument/SN N/A	Calibration Due: N/A	Purpose: Final Status Survey
Survey Performed By (Signature): Michael Kimbro *(signature)*		Survey Checked By (Signature): *(signature)*
☒ Battery OK — ☒ HV OK — ☒ Source Check OK		Grid Dimensions: N/A x N/A ☐ meters ☐ inches ☐ feet ☐ centimeters

Grid columns A–Z, rows 1–25.

Room 124 storage closet



(45) door knob (smear only)

(41) inside drum (smear only)
(42) outside drum (smear only)

- One 55-gallon waste drum was stored in this closet. This drum contained 1.56 ft³ of radioactive waste (double bagged).

- scanned floors and walls (up to 6') - 100%
- (#) static measurements and smears location.
- bare concrete floor scans: 560-660 cpm
- all other scans: 260-360 cpm
- see page 3 of this survey for direct measurement results.

Notes: Room 124 never used for "loose" radioactive materials

INTEGRATED ENVIRONMENTAL MANAGEMENT, INC.

RADIOLOGICAL SURVEY FORM

Survey Number 2008019.01 - 2

Instrument/SN: Ludlum 12 / 121768	Calibration Due: 01-27-2009	Site Name: West Virginia School of Osteopathic Medicine; Date: 02/14/2008; Time: [illegible]
Instrument/SN Ludlum 44-10 / 123336	Calibration Due: 01-27-2009	Location: Lewisburg, WV
Instrument/SN N/A	Calibration Due: N/A	Purpose: Final Status Survey
Survey Performed By (Signature): Michael Kimbro *Michael Kimbro*		Survey Checked By (Signature): [signature]
☑ Battery OK ☑ HV OK ☑ Source Check OK		Grid Dimensions: N/A x N/A ☐ meters ☐ feet ☐ inches ☐ centimeters

Row	No.	Location / Item	cpm	No.	Location / Item	cpm
1	STATIC MEASUREMENTS (CPM):			25	Room 243 ceiling	300
2	1	Room 243 bench top	280	26	ceiling	300
3	2	bench top	280	27	doorknob (SMEAR ONLY)	
4	3	bench top	300	28	Room 242 wall (block)	280
5	4	floor	260	29	wall (drywall)	280
6	5	floor	240	30	floor	280
7	6	sink drain	320	31	floor	280
8	7	inside freezer	240	32	table	280
9	8	liquid scint. counter	280	33	floor	300
10	9	floor	280	34	door knob (SMEAR only)	
11	10	floor	300	35	Room 124 floor	600
12	11	bench top	280	36	floor	580
13	12	bench top	300	37	wall (drywall)	280
14	13	air intake	240	38	wall (drywall)	280
15	14	sink drain	320	39	wall (drywall)	300
16	15	floor	300	40	exterior freezer	300
17	16	floor	280	41	inside drum (smear only)	
18	17	bench top	280	42	outside drum (smear only)	
19	18	wall (block)	280	43	door knob (smear only)	
20	19	wall (block)	300			
21	20	wood cabinet	280			
22	21	wood cabinet	280			
23	22	wall (block)	260			
24	23	wall (drywall)	280			
25	24	metal shelves	280			

Notes: All static measurements recorded in gross counts per minute

Appendix 8.5 - Analytical Results for Removable Activity

sahci

200 North Cedar Road – New Lenox, Illinois 60451-1751 – (800) 383-0468 or (815) 485-6161 – FAX (815) 485-4433 – Email sahci@sahci.com – Home Page www.sahci.com

March 2, 2009

Carol D. Berger
President
Integrated Environmental Management, Inc.
8 Brookes Avenue, Suite 205
Gaithersburg, MD 20877

Subject: Sample Analysis for ^{3}H and ^{14}C Detection

Dear Ms. Berger:

Per your request we have completed the analysis of the initial wipes that you provided. All samples were analyzed on February 26, 2009 using a Packard Liquid Scintillation Counter, Model U1900, Serial No. 101464. Each sample was counted for five (5) minutes. The DPM results are provided on the attached document.

If you have further questions or need additional information please feel free to contact me or Glenn Huber at 1-800-383-0468.

Sincerely,
Stan Huber Consultants, Inc.

James Hatten
Radiation Safety Officer, SAHCI

Enclosure

IEM Wipe Analysis 2/26/2009

Instrument Identification:	Manufacturer	Model	Serial	Analyze Date	BKG H3 cpm	BKG C14 cpm	H3 Eff	C14 Eff
LSC	Packard	U1900	101464	02/26/2009	15.78	23.95	0.641	0.9478

Protocol Information: H3 Window: 0-12 keV, C14 Window: 12-156 keV, Count time: 5 minutes

Sample #	H3 DPM	C14 DPM
1	3883.02	0.00
2	132.78	0.00
3	180.72	0.00
4	131.11	0.00
5	165.72	0.00
6	261.33	0.00
7	243.56	0.18
8	111.61	0.52
9	137.17	0.00
10	140.61	0.00
11	135.63	1.28
12	599.20	0.00
13	31.42	0.00
14	154.57	0.00
15	122.46	0.00
16	81.68	0.00
17	99.80	0.00
18	102.96	0.00
19	99.19	0.17
20	112.31	0.00
21	76.23	0.00
22	115.30	0.00
23	69.72	1.33
24	83.75	0.00
25	65.61	3.61
26	234.61	0.00
27	76.75	0.00
28	72.43	0.00
29	156.85	0.00
30	93.65	0.00
31	80.65	0.00
32	74.03	0.00
33	95.25	0.24
34	748.63	0.00
35	131.92	1.37
36	106.33	2.52
37	154.35	0.00
38	138.61	0.35
39	102.33	0.00
40	157.43	3.00
41	277.37	0.00
42	293.22	3.99
43	106.22	0.00

INTEGRATED ENVIRONMENTAL MANAGEMENT, INC.
ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD

Reference No 2008019.01

(1) Client Name West Virginia School of Osteopathic Medicine	(7) Samples Shipment Date 02/20/2009	(5) Bill to: Integrated Environmental Management
(2) Collected By: Michael Kimbro	(8) Lab Destination Stan A. Huber Consultants, INC.	8 Brookes Ave, Suite 205
(3) Job/Task No: 2008019.01	(9) Lab Contact Joel Ahrweiler	Gaithersburg, MD 20877
(4) Project Manager: Michael Kimbro	(12) IEM Technical Contact/Phone Carol Berger (240)631-8990	(10) Report to: Carol Berger IEM
(6) Purchase Order No. 0819.01.1	(13) Carrier/Waybill No. Fed Ex/7973 5717 0020	(fax) 240-631-8991
(11) Required Report Date 7 days past delivery		CDBerger@iem-inc.com

ONE CONTAINER PER LINE

(14) Sample Number	(15) Sample Description/Type	(16) Date/Time Collected	(17) Container Type	(18) Sample Volume	(19) Preservative	(20) Requested Testing Program
2008019.01 1 - 43	SMEAR	Feb 17-18, 2009	20 ml glass	100 cm2 N/A	N/A	Tritium count
(43 vials)						(dpm/100 cm²)
N/A	N/A	N/A	N/A	N/A	N/A	N/A

(23) Special Instructions See specifications attached to purchase order

(24) Possible Hazard Identification
Non-hazard ☒ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

(25) Sample Disposal
Return to Client ☐ Disposal by Lab ☒ Archive ________ months

(26) Turnaround Time Required: Normal ☒ Rush ☐

(27) QC Level: I ☐ II ☐ III ☐ Project Specific
See specifications Purchase order 0819.01.1

(28) Relinquished by: (signature, date, time): Michael Kimbro 2/20/09 1500	Received by: (signature, date, time) Joel Ahrweiler 2.24.09 1330
Relinquished by: (signature, date, time):	Received by: (signature, date, time)
Relinquished by: (signature, date, time):	Received by: (signature, date, time)

(See Reverse for Instructions)

STAN A. HUBER CONSULTANTS, INC.
200 NORTH CEDAR ROAD, NEW LENOX, IL 60451-1751
PHONE (815)485-6161

3/10/2009

FACILITY:	CITY:	STATE:
IEM Wipe Analysis	Gaithersburg	MD

INSTRUMENT IDENTIFICATION

MANUFACTURER: Packard MODEL #: U1900 SERIAL #: 101464

EFFICIENCY DETERMINATION

Background 15.78 cpm

Analysis: 2/26/2009

The Efficiency of the Detector is 0.641 or 64.1 %

LOWER LIMIT OF DETECTION (LLD)

$$LLD = \frac{2.71+4.65\sqrt{\frac{\text{Background rate}}{\text{Sample Count Time}}}}{\text{EFFICIENCY}} = \frac{2.71+4.65\sqrt{\frac{15.78 \text{ cpm}}{5 \text{ min}}}}{0.641}$$

LLD= 17 DPM or 7.7E-06 uCi

CALIBRATED BY: [signature]
James C. Hatten

Appendix 8.6 - Waste Acceptance Documentation

[illegible]

Area 1 - Bottom of Cell Mass

[illegible]

This report was prepared under the direction of
the West Virginia School of Osteopathic Medicine

by

Michael Kimbro

Michael W. Kimbro, RRPT
Integrated Environmental Management, Inc.
6700 Baum Drive, Suite 19
Knoxville, Tennessee 37919
(865) 588-1693
MW Kimbro@IEM-Inc.com

http://www.iem-inc.com

143742

UNITED STATES POSTAGE
PITNEY BOWES
02 1M
0004220557
$ 02.58⁰
MAY 13 2009
MAILED FROM ZIP CODE 24901

501 - Functional Biology

WEST VIRGINIA SCHOOL OF OSTEOPATHIC MEDICINE
400 NORTH LEE STREET
LEWISBURG, WV 24901

TO:

Elizabeth Ullrich, CHP
U.S. Nuclear Regulatory Commission
Division of Nuclear Materials Safety
475 Allendale Road
King of Prussia, PA 19406-1415

This is to acknowledge the receipt of your letter/application dated

5/1/2009, and to inform you that the initial processing which includes an administrative review has been performed.

✓ TEAM- 47-19315-01

☑ There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

☐ Please provide to this office within 30 days of your receipt of this card

____

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** 143742.
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.

NRC FORM 532 (RI)
(6-96)

Sincerely,
Licensing Assistance Team Leader